

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Claims | Claim:

1. (Amended) A trailer (1) for towing after a towing vehicle, said trailer (1) comprising:
 - a) a frame (3) configured for carrying a load and having:
 - i) a front end with a coupling (5) configured for connecting said trailer (1) to said the towing vehicle and allowing that the trailer (1) said frame and said the towing vehicle are able to assume different mutually angular positions in relation to each other during turning of said towing vehicle and said trailer along a curve track having about a turning point [[O]]; and
 - ii) a rear end;
 - b) a separate wheel frame (8) that is connected to said rear end of said the frame (3) by ~~means of connecting means (10)~~ at least one connecting link that allow a relative turning of said the frame (3) in relation to said the wheel frame (8) during said turning of said towing vehicle and said trailer along said curve track about a turning point O, said wheel frame (8) comprising oppositely arranged wheels (4) that support said the trailer during said the towing and that are arranged at a distance from each other close to a respective longitudinally extending side of said the frame; and
 - c) an actuator means (15) for producing configured to produce said relative turning of said the frame (3) in relation to said wheel frame;
characterized in
[[-]]that the wherein said connecting means (10) link also allow allows a controlled transversal transverse movement of said the frame in relation to said the wheel frame (8) in a direction towards or away from said turning

point Θ, that is in a direction transversal transverse to the direction of driving, simultaneously with said relative turning of said the frame (3) in relation to said wheel frame; and

[[-]]] that the trailer (1) comprises said actuator means (15) for also producing produces said transversal transverse movement of said the frame (3).

2. (Amended) A trailer according to claim 1, characterized in that the wherein said wheels (4) are arranged at said the rear end of said the trailer opposite said the coupling (5).

3. (Amended) A trailer according to claim 1 or 2, characterized in that the wherein said wheel frame (8) is arranged behind said the rear end of said the frame (3) in order to thus constitute said the rear end of said the trailer.

4. (Amended) A trailer according to any one of the preceding claims, characterized in that the claim 1, wherein said wheel frame (8) carries an agricultural implement, in particular a fold folding boom sprayer (20).

5. (Amended) A trailer according to any one of the preceding claims, characterized in that the claim 1, wherein said load is a liquid container.

6. (Amended) A trailer according to claim 5, characterized in that the wherein said container extends until or beyond said the rear end of said the frame (3); and that said the wheels (4) are arranged at said the rear end of said the trailer (1) opposite said the coupling (5).

7. (Amended) A trailer according to any one of the preceding claims, characterized in that the claim 1, wherein said wheels (4) are also arranged for turning about a vertical or essentially vertical axis in relation to said the wheel frame (8); and that an actuator (15'') means are coupled to said the wheel frame (8) to produce this said turning.

8. (Amended) A trailer according to any one of the preceding claims, characterized in that the claim 1, wherein said connecting means (10) are constituted of link constitutes at least two arms (10', 10'') that are pivotally

connected to said the frame {3} and said the wheel frame {8}, respectively, and constitute a trapezoidal mechanism for controlling said the movement of said the frame {3} along a curve track in relation to said the wheel frame {8}.

9. (Amended) A trailer according to ~~any one of the preceding claims 1-7, characterized in that the claim 1, wherein said connecting means (10) link~~ comprise a journaling for said the wheel frame {8} with slide steering for controlling said the movement of said the frame {3} along a ~~curve curved~~ line in relation to said wheel frame {8}.

10. (Amended) A trailer according to ~~any one of the preceding claims, characterized in claim 1, wherein said trailer includes~~ a control unit with a memory that produces, via said the actuator, a predetermined fixed setting of said the frame {3} in relation to said the wheel frame {8} in correspondence with the angle position between said towing vehicle and said the wheel frame {8}.

11. (Amended) A trailer according to ~~any one of the preceding claims, characterized in claim 1, said actuator means (15) are being connected to said the frame {3}, to said wheel frame {8} and/or to said the connecting link means (10).~~

12. (Amended) A system comprising a towing vehicle and a trailer {1} according to ~~any one of the preceding claims, characterized in claim 1, wherein said system includes~~ a control unit with a memory that produces, via the actuator ~~means (15)~~, a predetermined fixed setting of said the frame {3} in relation to said the wheel frame {8} in correspondence with the angle position between said the towing vehicle and said the wheel frame {8}.

13. (Amended) A system according to claim 12, ~~characterized in that wherein~~ the mutual distances ~~transversal transverse~~ to the direction of driving between said the wheels of said the towing vehicle and between said the wheels of said the trailer are essentially identical.

14. (Amended) A system according to claim 12, ~~characterized in that the wherein said~~ control unit is configured for ensuring that at least one set of wheels on said the towing vehicle and said the wheels {4} of said the trailer {1} move along the same ~~curve curved~~ line during turning about said the turning point [[O]].

15. (Amended) A method of steering a trailer (1) around a turning point (O), comprising the steps of:

~~said trailer being towed~~ towing a trailer by a towing vehicle, wherein the trailer (1) comprises:

a) a frame (3) configured for carrying a load, and having:
i) a front end with a coupling (5) configured for connecting the trailer (1) to the towing vehicle ~~and allowing that the trailer (1) and the towing vehicle are able to assume mutually angular positions during turning about a turning point O; and~~
ii) a rear end;

b) a separate wheel frame (8) ~~that is connected to the rear end frame (3) by means of connecting means (10) links that allow a relative turning of the frame (3) in relation to the wheel frame (8) during the steering~~, said wheel frame (8) comprising oppositely arranged wheels (4) that support the trailer (1) during the towing and that are arranged at a distance from each other close to a respective longitudinally extending side of the frame (3);

and

c) ~~an actuator means (15) for producing~~ configured to produce said relative turning of the frame (3); in relation to the wheel frame;

characterised in

~~that, by means of actuator means (15), a transversal movement of the frame (3) is produced in relation to the wheel frame (8) in a direction towards or away from said turning point (O) simultaneously with establishing a relative turning of the frame (3) in relation to the wheel frame (8). ; and~~

controlling the connecting links with said actuator, to provide a controlled transversal movement of said frame, in relation to said wheel frame, in a direction towards or away from said turning point simultaneously with said relative turning of said frame in relation to said wheel frame.

16. (New) A method of steering a trailer around a turning point according to claim 15, wherein said method further comprises the steps of:

determining the setting of said frame in relation to said wheel frame;
supplying said setting to a control unit; and
controlling said actuator from an output from said controller.

17. (New) A trailer for towing after a towing vehicle, said trailer comprising:

a) a frame configured for carrying a load having:

i) a front end with a coupling configured for connecting said trailer to said towing vehicle and allowing that said frame and said towing vehicle are able to assume different angular positions in relation to each other during turning of said towing vehicle and said trailer along a curve track having a turning point; and

ii) a rear end;

b) a separate wheel frame that is connected to said rear end of said frame with connecting links constituting at least two arms that are pivotally connected to said frame and said wheel frame respectively, and constitute a trapezoidal mechanism for controlling said movement of said frame along a curve track in relation to said wheel frame, said wheel frame comprising oppositely arranged wheels that support said trailer during said towing and that are arranged at a distance from each other close to a respective longitudinally extending side of said frame; and

c) an actuator configured to produce said relative turning of said frame in relation to said wheel frame,

said connecting links also configured to allow a controlled transverse movement of said frame in relation to said wheel frame in a direction towards or away from said turning point, that is in a direction transverse to the direction of driving, simultaneously with said relative turning of said frame in relation to said wheel frame; and

said actuator also configured to produce said transverse movement of said frame.

18. (New) A trailer according to claim 17, wherein said wheels are arranged at said rear end of said trailer opposite said coupling.

19. (New) A trailer according to claim 17, wherein said wheel frame is arranged behind said rear end of said frame in order to thus constitute said rear end of said trailer.

20. (New) A trailer according to claim 17, wherein said wheel frame carries an agricultural implement, in particular a folding boom sprayer.

21. (New) A trailer according to claim 17, wherein the load is a liquid container.

22. (New) A trailer according to claim 21, wherein said container extends until or beyond said rear end of said frame; and that said wheels are arranged at said rear end of said trailer opposite said coupling.

23. (New) A trailer according to claim 17, wherein said wheels are also arranged for turning about a vertical or essentially vertical axis in relation to said wheel frame; and said actuator is coupled to said wheel frame to produce said turning.

24. (New) A trailer according to claim 17, wherein said connecting link comprises a journaling for said wheel frame with slide steering for controlling said movement of said frame along a curve line in relation to said wheel frame.

25. (New) A trailer according to claim 17, wherein in a control unit with a memory that produces, via said actuator, a predetermined fixed setting of said frame in relation to said wheel frame in correspondence with the angle position between said towing vehicle and said wheel frame.

26. (New) A trailer according to claim 17, wherein said actuator is connected to said frame, to said wheel frame and/or to said connecting link.